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## ORIGINAL ARTICLES

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### Zimbabwe National Cancer Registry: Summary data 1986–1989

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#### SUMMARY

The Zimbabwe National Cancer Registry began operation in 1986. Between 1986–1989, a total of 8 276 cases were identified. Among men of African descent, oesophageal (11,2 pc) and liver cancer (11,0 pc) were most common. Cervical cancer was by far the most common among women of African descent (34,5 pc). Among both males and females of non-African descent, skin cancers (other than melanoma) accounted for one-third of cancers followed by prostate cancer (7,7 pc) in males and breast cancer (18,5 pc) in females. These findings are comparable to earlier reports of the epidemiology of cancer in Zimbabwe.

#### INTRODUCTION

The majority of cancer deaths occur in developing countries.<sup>1</sup> Population rates may underestimate the health impact of cancer in these settings, particularly

in older age groups, because most of the population has not yet reached an age vulnerable to common cancers.

Some cancers occur mainly in developing countries: most cases of cervical, oro-pharyngeal, oesophageal and liver cancer come from these areas.<sup>2</sup> In contrast, lung cancer, colon cancer and breast cancer are common in Europe and North America.

Such geographic variation in cancer occurrence lends support to the view that most cancer is environmental in origin (and hence preventable).<sup>3</sup> Indeed, it is widely believed that cancer incidence in developing countries will change as urbanisation and economic development result in both environmental and personal lifestyle changes. For all these reasons, documentation of cancer occurrence in developing countries is important.

Cancer registries seek to determine the magnitude and pattern of cancer occurrence, to provide a framework for research and to monitor the possible impact of intervention programmes.

Before 1980, Zimbabwe had a cancer registry in Bulawayo run by Dr M E Skinner which reported cancer incidence rates for the greater Bulawayo area to the International Agency for Research on Cancer (IARC) over a 15-year period (1963–1978). In 1986, the new computerised Zimbabwe National Cancer Registry was established with the assistance of a grant from the World Health Organisation. Its initial goal is the collection of data from the central referral hospitals in Harare by active case identification. The Registry relies on passive case identification for other areas. Eventually, the catchment area will be expanded so that population rates of cancer for Zimbabwe can be established.<sup>4</sup>

We report here a summary of data collected during the first four years of operation of the Zimbabwe National Cancer Registry.

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**Data Collection:** The registry relies on three main sources for the active identification of cancer cases: the Harare Central Hospital and Parirenyatwa Hospital wards and medical records departments, the government histology laboratory and the radiotherapy department. Registry clerks visit each of these areas on a regular basis to identify patients with cancer diagnoses. Routine rounds of the in-patient wards, in addition to the histology records, yield the majority of cases. Staging and histological type are confirmed by a doctor on the basis of record review.

Passive data collection takes place in several ways. Special registry cancer notification forms have been sent to Harare-based private practitioners. In addition, a large private histology laboratory in Harare provides the Registry with regular reports of cancer diagnoses.

The notification form records: 1) patient demographic data, such as birth date, age, sex, race, marital status, address and occupation, 2) information on cancer diagnosis, including date of diagnosis, basis of diagnosis, histology and stage and 3) current vital status. All data are entered on a personal computer using the CANREG software package developed by the IARC.<sup>5</sup>

**Data Presentation:** The cancer cases reported here represent data collected during the years 1986, 1987, 1988 and 1989. Because of staffing problems at the Registry, registration of cases actually fell during the first three years of this period. A total of 3 663 cases were reported in 1986; 1 384 in 1987; 981 in 1988. In 1989, 2 448 cases were identified reflecting improved staffing and data collection procedures. A year-by-year review of cases showed that the proportion of leading cancers remained relatively stable, with greater variability as numbers became small.

We present the data for the 1986–1989 year period in aggregate, tabulated by sex and race group, both of which have a bearing on cancer risk. For race classification, we use two categories: persons of “African descent” and persons of “non-African descent”. The latter includes the categories “European”, “Coloured”, “Asian”, “Other” and “unknown”. Inspection of the “unknown” category showed that more than 80 pc had English surnames, justifying the inclusion of this group in the “persons of non-African descent” category.

Registration is not yet complete enough to generate population rates. We present the numbers of cases with the proportion that each cancer represents of the total number of reported cancers. Results are reported using the ICD-9 format.<sup>6</sup>

**Cancer Cases — 1986–1989:** Of the total of 8 276 cases reported to the Registry between 1986–1989, 8 232 could be analysed in the ICD-9 format. As shown in Table I, over 75 pc of cases were identified in the government central hospitals (Harare Central Hospital, Parirenyatwa Hospital) or Harare private hospitals. Histology reports formed the basis for diagnosis in the majority of cases (see Table II).

*Table I: Place of diagnosis of cancers reported to the National Cancer Registry: 1986–1989.*

	Black (N = 7 277)		Non-Blacks (N = 998)	
	N	pc	N	pc
Harare Central Hospital	2 824	38,8	26	2,6
Parirenyatwa Hospital	2 548	35,0	178	17,8
Private Doctor	21	0,2	162	16,2
Private Hospital/Clinic	46	0,6	480	48,0

*Table II: Basis of diagnosis of cases identified by the National Cancer Registry: 1986–1989*

Basis	Number	pc
Histology	7 188	86,6
Necropsy	2	0,0
Cytology	134	1,6
Haematology	36	0,4
Surgery	111	1,3
Radiology	43	0,5
Clinical	596	7,2
Lab Test	26	0,3
Other	140	1,6
Total	8 276	100,0

Cases were about equally divided between males and females. Eighty-nine percent of cases were classified as “persons of African descent” (n = 7 263). This percentage is lower than the national proportion of people classified as “African” (96 pc).<sup>7</sup> There are possible biases in diagnosis and referral which may lead to over-representation of persons of non-African descent in the Registry. Table III–VI show cancers by site for four sex and race groups.

*Table III: Top ten causes of cancer among men of African descent 1986–1989*

Site	Number	pc
Oesophagus	481	13,2
Liver	401	11,0
Skin other than melanoma	399	11,0
Primary site uncertain	333	9,2
Prostate	298	8,2
Bronchus/Lung	209	5,7
Stomach	172	4,7
Bladder	163	4,5
Other reticulosos	86	2,4
Bone	81	2,2
Total	2 623	72,1

*Table IV: Top ten causes of cancer among women of African descent 1986–1989*

Site	Number	pc
Cervix uteri	1 249	34,5
Breast	310	8,6
Primary site uncertain	243	6,7
Skin other than melanoma	168	4,6
Bladder	119	3,3
Liver	111	3,1
Ovary etc.	93	2,6
Stomach	91	2,5
Uterus	66	1,8
Melanoma of skin	65	1,8
Total	2 515	69,5

*Table V: Top ten causes of cancer among men of non-African descent 1986–1989*

Site	Number	pc
Skin other than melanoma	160	38,4
Prostate	32	7,7
Bladder	28	6,7
Bronchus/Lung	24	5,8
Primary site uncertain	23	5,5
Colon	21	5,0
Rectum	14	3,4
Larynx	13	3,1
Other reticulosos	13	3,1
Melanoma of skin	11	2,6
Total	339	84,4

*Table VI: Top ten causes of cancer among women of non-African descent 1986–1989*

Site	Number	pc
Skin other than melanoma	105	19,0
Breast	102	18,5
Cervix uteri	44	8,0
Primary site uncertain	34	6,2
Colon	26	4,7
Uterus	23	4,2
Melanoma of skin	18	3,3
Rectum	14	2,5
Ovary etc.	13	2,4
Other reticulosos	10	1,8
Total	389	70,6

These data show that there is variation in the common cancers by race-sex group among cancer cases reported to the National Cancer Registry between 1986 and 1989. Among males of African descent, the most common cancers are oesophageal (13,2 pc) and liver cancer (11,0 pc). Among women of African descent, cervical cancer is by far the most common cancer (34,5 pc). Skin cancer (other than melanoma) was the most common cancer among both men and women of non-African descent, accounting for nearly one-third of all cancers. Most of these cancers were basal cell carcinomas (168/265, 63 pc). After skin cancer, the common cancers in males of non-African descent prostate (7,7 pc), bladder (6,7 pc) and lung (5,8 pc). After skin cancer, breast cancer was the most common among females of non-African descent (18,5 pc).

## DISCUSSION

The most recent cancer incidence rates for Zimbabwe were reported for 1963–1967, based on the Bulawayo Registry.<sup>8</sup> These showed liver cancer, oesophageal cancer and cancer of the bronchus/trachea to be the leading cancers among African men, while cervical cancer, followed by breast cancer, was the most common cancer among African women.

Data for 1973–1977 were not adequate to generate rates, but the proportions of cancer cases by site suggest a similar pattern. Liver cancer accounted for 18,1 pc of male cancers, followed by oesophageal cancer (12,8 pc) and lung cancer (11,3 pc).

Among women, cervical cancer accounted for 35,4 pc of cancers, followed by breast cancer (8,5 pc).<sup>9</sup>

The most recent data, based on the Central Histology Laboratory in Harare in 1981–1982 also show the leading male cancers to be liver and oesophageal cancer. Cervical cancer was by far the most common cancer among women of African descent.<sup>9</sup>

These earlier findings on the epidemiology of cancer in Zimbabwe are similar to those reported to the National Cancer Registry between 1986–1989. This suggests that, despite obvious possibilities of bias in reporting, reported cancer cases reasonably reflect the incidence of various cancers.

Bias arises from the urban base of the Registry. Although the central hospitals serve as referral centres, 80 pc or more of cancer cases may not be referred from provincial or district levels (Loewenson *et al.* unpublished data). In addition, some cancer diagnoses are more likely to result in patient referral than others.<sup>10</sup>

For example, it seems likely that the category “other skin cancers” is over-represented in the Registry. This may be a result of the fact that patients with this cancer are likely to be referred, biopsied and hence identified by the Registry.

On the other hand, patients with liver cancer may be more likely to be diagnosed clinically and less likely to be referred, because of the poor prognosis of this cancer. Such patients are thus less likely to be identified by the National Cancer Registry. This may account for the fact that oesophageal cancer is more common among reported cancer cases in this data set, although previous studies have found liver cancer to be more common than oesophageal cancer. It is also possible that the incidence of oesophageal cancer actually has increased and has surpassed that of liver cancer.

Despite the shortcomings in case identification, the consistency in the proportional distribution of cases between 1986–1989 in comparison with earlier data from different sources suggests that most common cancers identified in the Registry do indeed reflect population incidence rates. These findings will be useful in monitoring future trends and identifying intervention strategies.

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